SECTION A
DETECTION

Nondestructive testing allows us to study life with minimal alteration and disruption. Minimally invasive methods to diagnose disease are increasingly relied upon to reduce risk and discomfort to the patient. We monitor our surroundings to detect harmful environmental influences and prevent their deleterious effects. Radioactive tracers can pinpoint tumors, detect stroke damage, and assist in metabolic studies. All these important enterprises have benefited from evolution and innovation in technology.

1. A synthetic aperture radar microscope that can produce high-resolution 3-D images within seconds.

2. An isotope separation method that economically produces carbon-13 for diagnostic tests.

3. A high-strength, sterilizable polymer tubing that is both versatile and economical.

4. A low-cost, compact radiation monitor that can better quantify radiotherapy regimes as well as protect workers in nuclear medicine.